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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/442,756	11/18/1999	REINHARD BEUTH	9350-0144-0	6353

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

HON, SOW FUN

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

HG

Office Action Summary

Applicati n No.

09/442,756

Applicant(s)

BEUTH ET AL.

Examiner

Sow-Fun Hon

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-- The MAILING DATE of this c mmunication appears n the c ver sh et with th c rrespondenc address --
Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

- 4) ☒ Claim(s) 2,4-6,9-12,14-16 and 18-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Response to Amendment

Rejections Withdrawn

1. The 35 U.S.C. 112, 2nd paragraph rejection in Paper # 21 (mailed 12/05/02) of claims 2, 4-6, 9-12, 14-29 has been withdrawn due to Applicant's amendment in Paper # 23 (filed 03/05/03).
2. The 35 U.S.C. 103(a) rejections in Paper # 21 (mailed 12/05/02) have been withdrawn due to Applicant's amendment and clarifications in Paper # 23 (filed 03/05/03).

New Rejections

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

4. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what the molding composition is the way the claim has been written. It does not clearly set forth that the molding composition comprises the polyamide and flexible polymer, along with other additives as can be seen in the examples in the specification, and that the molding composition has not more than 2 % extractables in refluxing ethanol. See allowable subject matter section below.

Claim Rejections - 35 USC § 103

5. Claims 2, 4-6, 9-12, 14-16, 18-21, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitami et al. in view of Lausberg et al.

Kitami et al. has a pipe (hose) for coolant delivery with flexibility which is smaller than 2.0 kgf in bending strength (column 1, lines 55-65). The interior wall structure (inner peripheral wall) is formed from greater than 60 % by weight of a blend of polyamides which comprise PA (nylon) 11, 12, 66, 610, 612 and 10 to 40 % (parts) by weight of polyolefins such as polyethylene, polypropylene, ethylene propylene copolymer and maleic acid derivatives. The blends are highly impermeable to and less extractable with alcohols, resistant to stress cracking and fully acceptable in flexibility (column 6, lines 5-35). As described, since the blend can be used alone as a single layer, or laminated for reinforcement

Since Kitami et al. teaches that the blend is less extractable with alcohols and fully acceptable in flexibility, it is the examiner's position that the blends contain no more than 2 % extractables by refluxing ethanol.

As described, since the blend is the inner fluid-contacting layer, it can be used alone as a single layer, or laminated for reinforcement, or corrugated for curvature as seen with coolant delivery pipes or tubing.

Kitami et al. however, fails to teach the tensile modulus of elasticity of the blends.

Lausberg et al. teaches a molding composition comprising 10 to 90 % by weight of polyolefin (propylene homopolymer or copolymer) and 10 to 90 % by weight of polyamide (abstract). The tensile modulus of elasticity of the polyolefin is taught to be greater than 300 N/mm². It can thus be inferred that a blend of polyamide and polyolefin would then have a

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tensile modulus of elasticity that would overlap with the claimed range of 200 to 950 N/mm².

The polyolefin can also be ethylene-propylene rubber, ethylene-propylene-diene copolymers whereby the ethylene monomer component is greater than 50 % (copolymers of propylene, ethylene, butene, and dienes). Lausberg et al. teaches that the polyamides can be PA 612 (column 3, lines 5-55). An additional polyolefin component is 0.5 to 30 % by weight, and comprises ethylene copolymerized with 1 to 45 % by weight of acrylate, and are functionalized with epoxy groups or maleic anhydride (column 4, lines 10-68 and column 5, lines 1-15). The molding compositions are blended and then granulated before molding (column 10, lines 20-30).

Because Lausberg et al. teaches that the tensile modulus of elasticity of the polyolefin is greater than 300 N/mm², and both Kitami et al. and Lausberg et al. teach PA 612 with the same polyolefins as described above, it is the examiner's position that the composition of Kitami et al. has the claimed tensile modulus of elasticity.

6. Claims 22, 24, 27, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitami et al. in view of Bouilloux et al.

Kitami et al. has been discussed above and teaches a pipe for coolant delivery with the interior wall structure formed from greater than 60 % by weight of a blend of polyamides which comprise PA 11, 12, 66, 610, 612 and 10 to 40 % by weight of polyolefins such as polyethylene, polypropylene, ethylene propylene copolymer and maleic acid derivatives which are less extractable with alcohols and fully acceptable in flexibility, such that the blends contain no more than 2 % extractables by refluxing ethanol.

Kitami et al., however, fails to teach the claimed flexible polymers of styrene-ethylene-butene block copolymers, and the specific polyethylenes which are LDPE and LLDPE.

Bouilloux et al. is directed to molding compositions which are used for flexible pipes carrying coolant (for cooling) situated under the hood of cars, and teaches that the prior art has already described polyamides which have a high tensile modulus of elasticity (are flexible) owing to mixing with polyolefins. Bouilloux et al. teaches that the polyolefins replace the plasticizers which can leach out of the polyamide matrix, resulting in a decrease in the tensile modulus of elasticity (loss of the flexibility) (column 2, lines 5-15).

Bouilloux et al. teaches that the composition comprises polyamide and polyolefins (abstract). PA (polyamide) 12 (12-aminodecanoic acid condensation product) and PA 612 are taught (column 2, lines 50-68). Since Bouilloux et al. teaches that the polyolefins are polyethylenes such as LDPE, LLDPE, polypropylene, ethylene-propylene rubbers, ethylene-propylene-diene copolymers, styrene-ethylene-butene-styrene block copolymers, and ethylene-alkyl (meth)acrylate copolymers, and are functionalized with epoxy groups (epoxide) or maleic anhydride (column 5, lines 5-68 and column 6, lines 1-15), equivalence of the LDPE, LLDPE, styrene-ethylene-butene-styrene block copolymers is demonstrated with the polypropylene, ethylene-propylene rubbers, ethylene-propylene-diene copolymers. The compositions are blended, and then granulated before molding (column 9, lines 25-50).

Because Bouilloux et al. teaches that prior art teaches the use of polyamide/polyolefin compositions for molding flexible pipes carrying coolant situated under the hood of cars, and the equivalence of LDPE, LLDPE, styrene-ethylene-butene-styrene block copolymers with polypropylene, ethylene-propylene rubbers, ethylene-propylene-diene copolymers as the polyolefin component, it would have been obvious to one of ordinary skill in the art to have used LDPE, LLDPE, styrene-ethylene-butene-styrene block copolymers in place of the

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polypropylene, ethylene-propylene rubbers, ethylene-propylene-diene copolymers in the invention of Kitami et al. in order to obtain a coolant delivery pipe with alternate polyolefins and hence alternate physical properties aside from the flexibility.

7. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitami et al. in view of Jadamus et al.

Kitami et al. has been discussed above and teaches a pipe for coolant delivery with the interior wall structure formed from greater than 60 % by weight of a blend of polyamides which comprise PA 11, 12, 66, 610, 612 and 10 to 40 % by weight of polyolefins such as polyethylene, polypropylene, ethylene propylene copolymer and maleic acid derivatives which are less extractable with alcohols and fully acceptable in flexibility, such that the blends contain no more than 2 % extractables by refluxing ethanol.

Kitami et al., however, fails to teach polyalkenylene as part of the polyamide blend.

Jadamus et al. has pipes (column 6, lines 15-25) made out of 80 to 98 % polyamide and 20 % polyalkenylene (polyalkenamer) (column 4, lines 20-30). Maleic anhydride is grafted on the polyalkenylene (column 3, lines 60-65). Jadamus et al. teaches that the polyalkenylene is an alternative to polyethylene (column 1, lines 35-45). In addition, Jadamus et al. teaches that the polyalkenylenes produce synergistic effects thus allowing it to be used in smaller amounts relative to polyethylene (column 4, lines 50-60).

Because Jadamus et al. teaches that polyalkenylene is an alternative to polyethylene and that it produces synergistic effects in smaller amounts, it would have been obvious to one of ordinary skill in the art to have used it in lieu of the polyethylene in the invention of Kitami et al.

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in order to obtain a pipe with more polyamide in the blend so as to better maintain the desirable physical properties of polyamide and yet obtain the desired flexibility.

8. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitani et al. in view of Akkapeddi et al. (US 5,814,384).

Kitani et al. has been discussed above and teaches a pipe for coolant delivery with the interior wall structure formed from greater than 60 % by weight of a blend of polyamides which comprise PA 11, 12, 66, 610, 612 and 10 to 40 % by weight of polyolefins such as polyethylene, polypropylene, ethylene propylene copolymer and maleic acid derivatives which are less extractable with alcohols and fully acceptable in flexibility, such that the blends contain no more than 2 % extractables by refluxing ethanol.

Kitani et al, however, fails to teach PA 6-3T as one of the polyamides.

Akkapedi et al. has corrugated windshield wash (wiper) pipe (tubing) (column 5, lines 20-30) made from PA 610, PA 11, PA 12, and PA (nylon) 6-6T (column 2, lines 30-70) in the amount of 50 to 80 % (column 3, lines 55-70) which is a homolog of PA 6-3T. The polyamide composition has great flexibility resulting from the blending of unfunctionalized and functionalized polyethylene (column 5, lines 55-65). Akkapedi et al. teaches maleic anhydride modified LDPE (column 6, lines 60-70).

Because Akkapedi et al. has a pipe made from a homolog of PA 6-3T as an equivalent of PA 610, PA 11, PA 12 and is directed to a blend of the polyamide with a flexible LDPE, it would have been obvious to one of ordinary skill in the art to have used PA 6-3T in place of the PA 610, PA 11, PA 12 in the invention of Kitani et al. in order to obtain an alternate pipe with interior wall structure which has the physical properties of PA 6-3T.

Response to Arguments

9. Applicant's arguments with respect to claims 2, 4-6, 9-12, 14-16, 18-32 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

10. Claim 17 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action. See rewording below.

11. The following is an examiner's statement of reasons for allowance: the prior art neither teaches nor suggests:

A method of manufacturing screen wash systems and head lamp wash systems of motor vehicles, comprising fabricating the pipe components of said screen wash systems and head lamp wash systems from a pipe whose interior wall structural component *is made from a molding composition* comprised of: from 40 to 80 parts by weight of at least one polyamide selected from the group consisting of PA 46, PA 66, PA 610, PA 1010, PA 612, PA 1012, PA 11, PA 12, PA 1212, and PA 6,3-T and from 60 to 20 parts by weight of a flexible polymer whose main chain consists of carbon atoms, where the amounts of I and II in parts by weight total 100, which *molding composition* when in the form of granules, comprises not more than 2 % by weight of extractables, measured by extracting the granules with hot 100 % ethanol under reflux conditions, *and wherein* the pipe *transports* aqueous, aqueous-alcoholic or purely alcoholic liquids. It is unobvious over the prior art to fabricate the interior wall of a pipe component of a motor vehicle wash system out of a molding composition which comprises polyamide

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composition containing only polyamide and a flexible polymer whose main chain consists of carbon atoms, wherein said molding composition contains not more than 2 % by weight of extractables in ethanol at reflux temperature since the extractables ordinarily act as plasticizers to prevent the pipe from stress-cracking when wash fluid is repeatedly forced through at high pressure while being bent in order to conform around the engine parts under the hood of the vehicle.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (703)308-3265. The examiner can normally be reached Monday to Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (703)308-4251. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

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Sow-Fun Hon
05/16/03


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

5/19/03